

## NMCP COVID-19 Literature Report #37: Friday, 28 August 2020

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**Purpose:** These now weekly reports, published on Fridays, are curated collections of current research, evidence reviews, and news regarding the COVID-19 pandemic. Please feel free to reach out with questions, suggestions for future topics, or any other concerns.

All reports are available online at <https://nmcp.libguides.com/covidreport>. Access is private; you will need to use the direct link or bookmark the URL, along with the case-sensitive password "NMCPfinest".

**Disclaimer:** I am not a medical professional. This document is current as of the date noted above. While I make every effort to find and summarize available data, things are changing rapidly, with new research and potentially conflicting literature published daily.

### Statistics

*Global today:* 24,499,384 confirmed cases and 832,608 deaths in 188 countries/regions

*last week:* 22,726,945 confirmed cases and 794,466 deaths in 188 countries/regions

#### United States\*

top 5 states by cases (Virginia is ranked 16th)

	TOTAL US	CA	TX	FL	NY	GA
Confirmed Cases	5,873,124	693,138	614,696	611,991	432,131	263,074
Tested	75,301,306	10,918,415	4,793,914	4,517,364	7,905,071	2,268,837
Recovered	NA	NA	478,752	NA	74,850	NA
Deaths	180,901	12,698	12,370	10,868	32,926	5,393

\*see [census.gov](https://census.gov) for current US Population data; NA: not all data available

[JHU CSSE](#) as of 1100 EDT 28 August 2020

Virginia	Total	Chesapeake	Hampton	Newport News	Norfolk	Portsmouth	Suffolk	Virginia Beach
Cases	117,592	3,660	1,519	2,216	4,328	2,186	1,603	5,906
Hospitalized	9,460	309	54	89	281	172	113	319
Deaths	2,550	47	16	21	52	32	59	65

[VA DOH](#) as of 1100 EDT 28 August 2020

## Coronavirus Testing Guidance

*Note: Text below taken from [Johns Hopkins Center for Health Security COVID-19 updates newsletter for 26 August 2020](#). The section on CDC testing guidance is quote copied here because it provides a good summary of the issues. Embedded links are retained and edited to include [link source].*

"Earlier this week [Monday, 24 August 2020], the US CDC published a [major update to its SARS-CoV-2 testing guidance](#) [CDC]. The biggest change addresses [asymptomatic individuals with known exposure](#) [CNN] to a COVID-19 case. In the [previous version of the testing guidance](#) [Web Archive of CDC], the CDC recommended diagnostic testing for, among others, "asymptomatic individuals with recent known or suspected exposure to SARS-CoV-2 [in order to] to control transmission." In the current iteration, the CDC states that asymptomatic individuals who have close contact with a COVID-19 case "do not necessarily need a test unless [they] are a vulnerable individual" or if it is recommended or required by their healthcare provider or local or state public health agency. Notably, [testing guidance published on other sections of the CDC website](#) [CDC], updated on the same date as the testing guidance described above, continues to include close contact with a known case as a principal consideration for testing, along with exhibiting COVID-19 symptoms and referral by healthcare providers or public health officials.

The recommendation that asymptomatic individuals with known exposure do not necessarily need to be tested has potentially serious implications for both COVID-19 control and surveillance. The updated guidance does recommend that these individuals monitor for symptoms, but as we have covered previously, it is widely understood that individuals infected with SARS-CoV-2 can transmit the infection without exhibiting symptoms—either in the days prior to the onset of symptoms or without developing symptoms at all. In fact, the CDC's own "current best estimate" indicates that [50% of SARS-CoV-2 transmission occurs prior to the onset of symptoms](#) [CDC] (presymptomatic transmission) and that asymptomatic individuals are still 75% as infectious as symptomatic cases. Further down in the new testing guidance, at the bottom of the page, the CDC explicitly notes that infected individuals can spread the virus to others while they are not symptomatic, but the guidance does not provide further information regarding self-quarantine or other measures to mitigate this risk. Without testing, asymptomatic individuals would have no way of knowing that they are infected and potentially placing others at risk. Considering the significant role of asymptomatic and presymptomatic transmission, it is unclear why the testing guidance would de-emphasize testing any individuals with known exposure.

The new testing guidance also states that asymptomatic individuals with known exposure "should strictly adhere to CDC mitigation protocols"; however, it is not clear exactly to which protocols the guidance is referring. The [CDC guidance on community-related](#)

[exposures](#) [CDC] recommends that exposed individuals [self-quarantine for 14 days](#) [CDC], monitor for fever and other symptoms, and avoid higher-risk individuals, but there is no link to this information from the new testing guidance. It is possible that the CDC wholly shifted its focus to self-quarantine following all known exposures, at least for asymptomatic individuals, rather than waiting for or relying on diagnostic test results; however, this is not all that clear from reading the updated testing guidance alone. Individuals seeking information on testing would also need to know where else to look in order to get the full set of recommendations.

Regardless of whether quarantine without testing would be sufficient to contain the spread of COVID-19—including whether exposed individuals would voluntarily self-quarantine in the absence of both symptoms and a positive test—the change could also impact public health COVID-19 surveillance. The CDC guidance notes that state and local health departments may require testing for asymptomatic individuals with known exposure, but the change in guidance could have a substantial impact on the volume of testing conducted for these individuals, particularly for those not already known to health officials (eg, through contact tracing). A spokesperson for the Department of Health and Human Services argued that the updated guidance functions to support public health surveillance at the state and local levels. Public health officials have struggled since the onset of the pandemic to characterize the scale of infection in their communities, particularly with respect to asymptomatic infections or mild cases. If asymptomatic individuals with known exposure are no longer recommended for testing, this could limit the number of infections reported to public health agencies and prioritize those with more severe disease, much like what occurred early in the pandemic. This has potentially serious implications for our understanding of the level of community transmission as well as disease severity and mortality risk. Notably, the CDC guidance for schools repeatedly emphasizes the need to [understand and control community transmission](#) [CNN] in order to mitigate transmission risk as students return to in-person classes. Without testing asymptomatic individuals with known exposure, it could give the false impression that community transmission is lower than it actually is, which could subsequently increase the risk for school-based transmission, clusters, and outbreaks."

These changes are not without controversy. Public health experts have been alarmed, pointing out that Anthony Fauci was not involved in the update as he was undergoing a surgical procedure with general anesthesia ([STAT](#)). CDC Director Robert Redfield has attempted to clarify the changes ([STAT](#)).

The Infectious Diseases Society of America (IDSA) and HIV Medicine Association (HIVMA) released a joint statement calling for the "immediate reversal of the abrupt revision" of the CDC testing guidelines ([IDSA/HIVMA](#)). It states:

"It is essential that public health guidelines be rooted in the best available scientific evidence. Testing asymptomatic individuals who have been exposed to a person with

COVID-19 remains a critical evidence-based strategy for containing the pandemic and reducing transmission. IDSA stands behind our [guideline on the diagnosis of COVID-19](#).<sup>"</sup> ([IDSA/HIVMA](#))

On 24 August 2020, the Department of Defense released Force Health Protection Guidance (Supplement 13); this updated memorandum addresses testing guidance ([DOD](#)).

## Special Reports and Other Publications

ASPR: [COVID-19 Healthcare Lessons Learned \[pdf\]](#) (August 2020)

"This issue presents relevant articles, tools, quick sheets, and templates in a 'digest format' around the following topic areas: managing patient surge, safety and staff health, operational considerations, telehealth, and hot topics/ what's next.

In addition to highlighting The Exchange, this issue of the Express highlights the following resources:

- [Healthcare Coalition Infectious Disease Surge Annex Template \[pdf\]](#) - Provides a voluntary template for HCCs to use when developing their infectious disease surge annex.
- [Interim Guidance: SARS-CoV-2 \(COVID-19\) and Field Trauma Triage Principles \[pdf\]](#) - Provides an overview of how COVID-19 impacts trauma triage for first responders, including emergency medical service, fire and rescue, and law enforcement"

NASEM: [Encouraging Participation and Cooperation in Contact Tracing: Lessons from Survey Research](#) (published 25 August 2020)

"Contact tracing shares important features with the collection of survey data, as well as the taking of the U.S. Census. This rapid expert consultation suggests proven strategies from survey research that decision makers can use to encourage participation in and cooperation with contact tracing efforts along two fronts: encouraging individuals to respond to outreach from health department officials regarding participation in contact tracing and case investigation, and encouraging those who do participate to share information about people whom they may have exposed to COVID-19.

Encouraging Participation and Cooperation in Contact Tracing is intended to help decision makers in local public health departments and local governments increase participation and cooperation in contact tracing related to COVID-19. This publication focuses on contact tracing methods that involve phone, text, or email interviews with people who have tested positive and with others they may have exposed to the virus."

TML: [Treatments Considered for COVID-19 \[pdf\]](#) (updated 27 August 2020)

An extensive, 85-page document that lists pertinent evidence on the clinical effectiveness and safety of some drugs and other therapies being considered for COVID-19 in a table format. Treatments profiled include: antivirals; convalescent plasma; IVIG; monoclonal antibodies; oleandrin; corticosteroids (systemic and inhaled); IL-6 inhibitors; JAK inhibitors; antimalarials; HIV protease inhibitors; H2-receptor antagonists; vaccines; and numerous others.

### **Selected Literature: Peer-Reviewed Journals**

*Date given is the date published or posted online; often these papers are ahead of print.*

*27 August 2020*

JAMA Oncol: [Prevalence of Surface Contamination With SARS-CoV-2 in a Radiation Oncology Clinic](#)

"Systematic testing of environmental surfaces in the radiation oncology clinic revealed no detectable SARS-CoV-2 RNA. Patients, staff, and physicians may be concerned about the potential risks of SARS-CoV-2 transmission in a hospital-based or outpatient clinic. Moreover, radiation oncology clinics are often housed in tertiary care hospitals that can have a high prevalence of patients with COVID-19, perhaps intensifying fears of infection. Many of the patients with cancer at our clinic have deferred or canceled their scheduled follow-up visits because of fears about COVID-19, and many radiation oncology clinics have experienced substantial decreases in patient volume because of the pandemic. Although rescheduling follow-up visits or converting selected follow-up visits and consultations to telemedicine is good practice during the pandemic, some patients or clinicians may delay or decline important cancer therapies that can substantially affect quality of life and cancer outcomes. We believe that appropriate patient care should not be delayed because of the pandemic. The results of this study suggest that following strict prevention protocols and routine cleaning and disinfecting seem adequate for limiting surface contamination with SARS-CoV-2."

*26 August 2020*

JAMA: [The Transformational Effects of COVID-19 on Medical Education](#)

Viewpoint article that discusses the various ways medical education has had to pivot and adjust during the coronavirus pandemic.

See also related audio: <https://edhub.ama-assn.org/in-learning/audio-player/18536657>

JAMA: [Moving the Financing of Graduate Medical Education Into the 21st Century](#)

Viewpoint article that discusses the funding streams for GME and what other options might be available moving forward.

JAMA Ophthalmol: [Ocular Manifestations and Clinical Characteristics of Children With Laboratory-Confirmed COVID-19 in Wuhan, China](#)

"Question: What are the ocular manifestations and outcomes in children with confirmed coronavirus disease 2019 (COVID-19) and what factors contributed to ocular symptoms during the course of disease in children?

Findings: In this cross-sectional study of 216 children hospitalized with COVID-19 in Wuhan, China, 49 (22.7%) had ocular manifestations, including conjunctival discharge, eye rubbing, and conjunctival congestion. Children with systemic symptoms or cough were more likely to develop ocular symptoms, which were mild, and recovered or improved with minimal eye drops or self-healing.

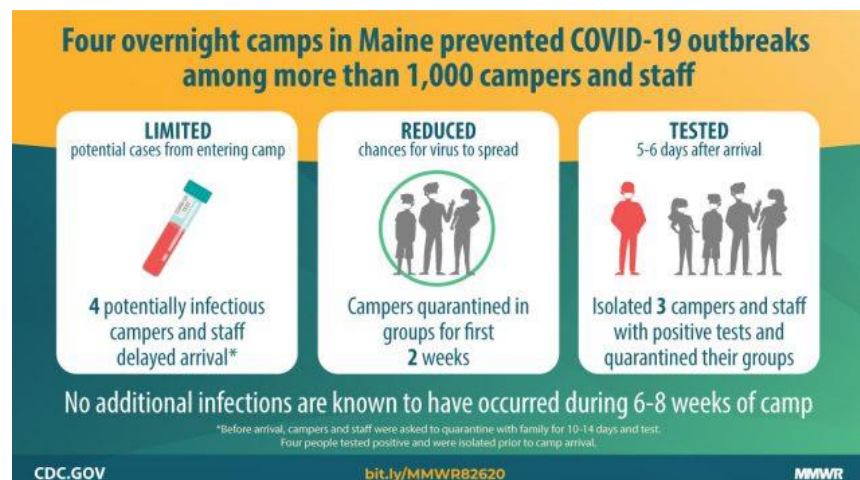
Meaning: These data could help guide prevention and management of ocular disorders in children with COVID-19."

MMWR: [Preventing and Mitigating SARS-CoV-2 Transmission — Four Overnight Camps, Maine, June–August 2020](#)

"Nonpharmaceutical interventions (NPIs) have been shown to decrease spread of communicable disease. Data on the effectiveness of NPIs on the prevention and mitigation of SARS-CoV-2 transmission among children and adolescents in congregate settings are limited.

During the 2020 summer camp season, four Maine overnight camps with 1,022 attendees from 41 states and international locations implemented a multilayered prevention and mitigation strategy that was successful in identifying and isolating three asymptomatic COVID-19 cases and preventing secondary transmission.

Understanding successful interventions to prevent and mitigate SARS-CoV-2 transmission in overnight camps has important implications for similar congregate settings such as day camps and schools with the same age range."



Nature: [Sex differences in immune responses that underlie COVID-19 disease outcomes](#)

"A growing body of evidence indicates sex differences in the clinical outcomes of coronavirus disease 2019 (COVID-19). However, whether immune responses against SARS-CoV-2 differ between sexes, and whether such differences explain male susceptibility to COVID-19, is currently unknown. In this study, we examined sex differences in viral loads, SARS-CoV-2-specific antibody titers, plasma cytokines, as well as blood cell phenotyping in COVID-19 patients. By focusing our analysis on patients with moderate disease who had not received immunomodulatory medications, our results revealed that male patients had higher plasma levels of innate immune cytokines such as IL-8 and IL-18 along with more robust induction of non-classical monocytes. In contrast, female patients mounted significantly more robust T cell activation than male patients during SARS-CoV-2 infection, which was sustained in old age. Importantly, we found that a poor T cell response negatively correlated with patients' age and was associated with worse disease outcome in male patients, but not in female patients. Conversely, higher innate immune cytokines in female patients associated with worse disease progression, but not in male patients. These findings reveal a possible explanation underlying observed sex biases in COVID-19, and provide an important basis for the development of a sex-based approach to the treatment and care of men and women with COVID-19."

*25 August 2020*

BMJ: [Two metres or one: what is the evidence for physical distancing in covid-19?](#)

"Instead of single, fixed physical distance rules, we propose graded recommendations that better reflect the multiple factors that combine to determine risk. This would provide greater protection in the highest risk settings but also greater freedom in lower risk settings, potentially enabling a return towards normality in some aspects of social and economic life....

Key messages:

- Current rules on safe physical distancing are based on outdated science
- Distribution of viral particles is affected by numerous factors, including air flow
- Evidence suggests SARS-CoV-2 may travel more than 2 m through activities such as coughing and shouting
- Rules on distancing should reflect the multiple factors that affect risk, including ventilation, occupancy, and exposure time"



Clin Infect Dis: [COVID-19 re-infection by a phylogenetically distinct SARS-coronavirus-2 strain confirmed by whole genome sequencing](#)

"Waning immunity occurs in patients who have recovered from COVID-19. However, it remains unclear whether true re-infection occurs.

Whole genome sequencing was performed directly on respiratory specimens collected during two episodes of COVID-19 in a patient. Comparative genome analysis was conducted to differentiate re-infection from persistent viral shedding. Laboratory results, including RT-PCR Ct values and serum SARS-CoV-2 IgG, were analyzed.

The second episode of asymptomatic infection occurred 142 days after the first symptomatic episode in an apparently immunocompetent patient. During the second episode, there was serological evidence of elevated C-reactive protein and SARS-CoV-2 IgG seroconversion. Viral genomes from first and second episodes belong to different clades/lineages. Compared to viral genomes in GISAID, the first virus genome has a stop codon at position 64 of orf8 leading to a truncation of 58 amino acids, and was phylogenetically closely related to strains collected in March/April 2020, while the second virus genome was closely related to strains collected in July/August 2020. Another 23 nucleotide and 13 amino acid differences located in 9 different proteins, including positions of B and T cell epitopes, were found between viruses from the first and second episodes.

Epidemiological, clinical, serological and genomic analyses confirmed that the patient had re-infection instead of persistent viral shedding from first infection. Our results suggest SARS-CoV-2 may continue to circulate among the human populations despite herd immunity due to natural infection or vaccination. Further studies of patients with re-infection will shed light on protective correlates important for vaccine design."

Diabetes Care: [Metabolic Syndrome and COVID-19 Mortality Among Adult Black Patients in New Orleans](#)

"Coronavirus disease 2019 (COVID-19) mortality is high in patients with hypertension, obesity, and diabetes. We examined the association between hypertension, obesity, and diabetes, individually and clustered as metabolic syndrome (MetS), and COVID-19 outcomes in patients hospitalized in New Orleans during the peak of the outbreak.

Data were collected from 287 consecutive patients with COVID-19 hospitalized at two hospitals in New Orleans, LA from 30 March to 5 April 2020. MetS was identified per World Health Organization criteria.

Among 287 patients (mean age 61.5 years; female, 56.8%; non-Hispanic black, 85.4%), MetS was present in 188 (66%). MetS was significantly associated with mortality (adjusted odds ratio [aOR] 3.42 [95% CI 1.52–7.69]), intensive care unit (ICU) (aOR 4.59 [CI 2.53–8.32]), invasive mechanical ventilation (IMV) (aOR 4.71 [CI 2.50–8.87]), and acute respiratory distress syndrome (ARDS) (aOR 4.70 [CI 2.25–9.82]) compared with non-MetS. Multivariable



analyses of hypertension, obesity, and diabetes individually showed no association with mortality. Obesity was associated with ICU (aOR 2.18 [CI, 1.25–3.81]), ARDS (aOR 2.44 [CI 1.28–4.65]), and IMV (aOR 2.36 [CI 1.33–4.21]). Diabetes was associated with ICU (aOR 2.22 [CI 1.24–3.98]) and IMV (aOR 2.12 [CI 1.16–3.89]). Hypertension was not significantly associated with any outcome. Inflammatory biomarkers associated with MetS, CRP, and lactate dehydrogenase (LDH) were associated with mortality (CRP [aOR 3.66] [CI 1.22–10.97] and LDH [aOR 3.49] [CI 1.78–6.83]).

In predominantly black patients hospitalized for COVID-19, the clustering of hypertension, obesity, and diabetes as MetS increased the odds of mortality compared with these comorbidities individually."

JAMA Pediatr: [Prevalence of SARS-CoV-2 Infection in Children Without Symptoms of Coronavirus Disease 2019](#)

"The prevalence of SARS-CoV-2 infection in children who are asymptomatic was reported by pediatric otolaryngologists as part of a quality improvement project through May 29, 2020. Reverse transcription–polymerase chain reaction tests for SARS-CoV-2 RNA were performed before surgery, clinic visits, or hospital admissions. In some instances, children may have had symptoms associated with their primary condition that overlapped with symptoms of COVID-19, but testing was not done out of suspicion of SARS-CoV-2 as the primary causative mechanism of illness...

These findings suggest a low pooled prevalence of positive SARS-CoV-2 test results among children who were asymptomatic and presenting for surgical or medical care. Heterogeneity of the pooled prevalence estimates suggests that site-specific prevalence data have greater utility than regional pooled prevalence for local decision-making. However, sufficiently powered prevalence data on the local asymptomatic pediatric population are difficult to obtain for most individual institutions."

*24 August 2020*

JAMA: [Time Course of a Second Outbreak of COVID-19 in Beijing, China, June-July 2020](#)

"An outbreak of SARS-CoV-2 infection in Beijing was rapidly detected and contained, based on lessons learned from the Wuhan outbreak. The findings highlight the benefit of highly sensitive surveillance, immediate response, and rapid containment. Application of a risk assessment tool based on SARS-CoV-2 seeding and doubling times indicated there was high probability of the Beijing outbreak escalating. However, the speed and magnitude of the response was associated with lengthened doubling time and control of the outbreak and may have averted a large epidemic wave. The outbreaks in both Wuhan and Beijing were linked to seafood markets, but further investigation is required to determine the root cause. The main limitations of the study were that only preliminary case data were available, and

results of environmental testing and response measures are still being analyzed. Nevertheless, this study underscores the effectiveness of sensitive surveillance, immediate investigation, and rapid response in combination with public health interventions in containing an outbreak of SARS-CoV-2."

JAMA Intern Med: [Internet Searches for Acute Anxiety During the Early Stages of the COVID-19 Pandemic](#)

"During the COVID-19 pandemic internet searches indicative of acute anxiety spiked early during the pandemic, but have since returned to typical levels, perhaps because Americans have become more resilient to the societal fallout from COVID-19 or because they had already received whatever benefit they could from searching the internet.

Even though acute anxiety has received substantial rhetorical attention during the COVID-19 pandemic, to our knowledge it has not been subject to scientific inquiry until now. Although this study cannot confirm that any search was linked to a specific acute anxiety event or panic attack, it provides evidence of the collateral psychological effects stemming from COVID-19, and motivates several data-driven recommendations."

*Editorial note:* See also: [Your 'Doomscrolling' Breeds Anxiety. Here's How To Stop The Cycle](#)

JAMA Netw Open: [Assessment of Pediatric Outpatient Visits for Notifiable Infectious Diseases in a University Hospital in Beijing During COVID-19](#)

"We found a decrease in pediatric outpatient visits for notifiable infectious diseases in a university hospital in Beijing during the COVID-19 outbreak. Except for scarlet fever (transmitted only via droplet) and acute hemorrhagic conjunctivitis (transmitted only via contact), the notifiable diseases studied, especially influenza, infect people via either droplet or contact transmission. Strict implementation of public health control measures in response to COVID-19 might have inhibited droplet and contact transmission of common infectious viruses. Guardian fear of contracting COVID-19 in the hospital may be a reason for the reduced number of outpatients. However, the reduced proportion of patients with notifiable infectious diseases confirms that these diseases were somewhat contained during the COVID-19 outbreak, especially given that febrile patients are required to seek urgent medical care."

PNAS: [US racial inequality may be as deadly as COVID-19](#)

"The COVID-19 pandemic is causing a catastrophic increase in US mortality. How does the scale of this pandemic compare to another US catastrophe: racial inequality? Using demographic models, I estimate how many excess White deaths would raise US White mortality to the best-ever (lowest) US Black level under alternative, plausible assumptions about the age patterning of excess mortality in 2020. I find that 400,000 excess White deaths would be needed to equal the best mortality ever recorded among Blacks. For White mortality in 2020 to reach levels that Blacks experience outside of pandemics, current

COVID-19 mortality levels would need to increase by a factor of nearly 6. Moreover, White life expectancy in 2020 will remain higher than Black life expectancy has ever been unless nearly 700,000 excess White deaths occur. Even amid COVID-19, US White mortality is likely to be less than what US Blacks have experienced every year. I argue that, if Black disadvantage operates every year on the scale of Whites' experience of COVID-19, then so too should the tools we deploy to fight it. Our imagination should not be limited by how accustomed the United States is to profound racial inequality."

*21 August 2020*

Ann Intern Med: [Addressing Postpandemic Clinician Mental Health : A Narrative Review and Conceptual Framework](#)

"Previous pandemics have seen high psychiatric morbidity among health care workers. Protecting clinician mental health in the aftermath of coronavirus disease 2019 (COVID-19) requires an evidence-based approach to developing and deploying comprehensive clinician mental health support. In a narrative review of 96 articles addressing clinician mental health in COVID-19 and prior pandemics, 7 themes emerged: 1) the need for resilience and stress reduction training; 2) providing for clinicians' basic needs (food, drink, adequate rest, quarantine-appropriate housing, transportation, child care, personal protective equipment); 3) the importance of specialized training for pandemic-induced changes in job roles; 4) recognition and clear communication from leadership; 5) acknowledgment of and strategies for addressing moral injury; 6) the need for peer and social support interventions; and 7) normalization and provision of mental health support programs. In addition to the literature review, in collaboration with the Collaborative for Healing and Renewal in Medicine (CHARM) network, the authors gathered practice guidelines and resources from health care organizations and professional societies worldwide to synthesize a list of resources deemed high-yield by well-being leaders. Studies of previous pandemics demonstrate heightened distress in health care workers years after the event. The COVID-19 pandemic presents unique challenges that surpass those of previous pandemics, suggesting a significant mental health toll on clinicians. Long-term, proactive individual, organizational, and societal infrastructures for clinician mental health support are needed to mitigate the psychological costs of providing care during the COVID-19 pandemic."

Cell: [A single-dose intranasal ChAd vaccine protects upper and lower respiratory tracts against SARS-CoV-2](#)

"The Coronavirus Disease 2019 pandemic has made deployment of an effective vaccine a global health priority. We evaluated the protective activity of a chimpanzee adenovirus30 vectored vaccine encoding a pre-fusion stabilized spike protein (ChAd-SARS-CoV-2-S) in challenge studies with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and mice expressing the human angiotensin-converting enzyme 2 receptor. Intramuscular

dosing of ChAd-SARS-CoV-2-S induces robust systemic humoral and cell-mediated immune responses and protects against lung infection, inflammation, and pathology but does not confer sterilizing immunity, as evidenced by detection of viral RNA and induction of anti-nucleoprotein antibodies after SARS-CoV-2 challenge. In contrast, a single intranasal dose of ChAd-SARS-CoV-2-S induces high levels of neutralizing antibodies, promotes systemic and mucosal IgA and T cell responses, and virtually completely prevents SARS-CoV-2 infection in both the upper and lower respiratory tracts. Intranasal administration of ChAd-SARS-CoV-2-S is a candidate for preventing SARS-CoV-2 infection and transmission, and curtailing pandemic spread."

Emerg Infect Dis: [Asymptomatic Transmission of SARS-CoV-2 on Evacuation Flight](#)

"We conducted a cohort study in a controlled environment to measure asymptomatic transmission of severe acute respiratory syndrome coronavirus 2 on a flight from Italy to South Korea. Our results suggest that stringent global regulations are necessary for the prevention of transmission of this virus on aircraft."

Emerg Infect Dis: [Epidemiology of COVID-19 Outbreak on Cruise Ship Quarantined at Yokohama, Japan, February 2020](#)

"To improve understanding of coronavirus disease (COVID-19), we assessed the epidemiology of an outbreak on a cruise ship, February 5–24, 2020. The study population included persons on board on February 3 (2,666 passengers, 1,045 crew). Passengers had a mean age of 66.1 years and were 55% female; crew had a mean age of 36.6 years and were 81% male. Of passengers, 544 (20.4%) were infected, 314 (57.7%) asymptomatic. Attack rates were highest in 4-person cabins (30.0%; n = 18). Of crew, 143 (13.7%) were infected, 64 (44.8%) asymptomatic. Passenger cases peaked February 7, and 35 had onset before quarantine. Crew cases peaked on February 11 and 13. The median serial interval between cases in the same cabin was 2 days. This study shows that severe acute respiratory syndrome coronavirus 2 is infectious in closed settings, that subclinical infection is common, and that close contact is key for transmission."

Int J Infect Dis: [Diagnostic yield of repeat testing for SARS-CoV-2: Experience from a large health system in Los Angeles](#)

"A retrospective analysis was performed of all SARS-CoV-2 test results within the UCLA Health System between March 9th and April 29th, 2020. All patients with repeat test results were identified and those with discordant results were reviewed.

- Of the 10,165 SARS-CoV-2 test results within our medical center, 6.2% were positive.
- 904 patients had repeat test results, 808 (89.4%) following a negative test.
- Only 1.9% of patients tested positive for SARS-CoV-2 after an initial negative test."

J Clin Microbiol: [Neutralizing antibodies correlate with protection from SARS-CoV-2 in humans during a fishery vessel outbreak with high attack rate](#)

"The development of vaccines against SARS-CoV-2 would be greatly facilitated by the identification of immunological correlates of protection in humans. However, to date, studies on protective immunity have only been performed in animal models and correlates of protection have not been established in humans. Here, we describe an outbreak of SARS-CoV-2 on a fishing vessel associated with a high attack rate. Predeparture serological and viral RT-PCR testing along with repeat testing after return to shore was available for 120 of the 122 persons on board over a median follow-up of 32.5 days (range 18.8 to 50.5 days). A total of 104 individuals had an RT-PCR positive viral test with Ct <35 or seroconverted during the follow-up period, yielding an attack rate on board of 85.2% (104/122 individuals). Metagenomic sequencing of 39 viral genomes suggested the outbreak originated largely from a single viral clade. Only three crewmembers tested seropositive prior to the boat's departure in initial serological screening and also had neutralizing and spike-reactive antibodies in follow-up assays. None of these crewmembers with neutralizing antibody titers showed evidence of bona fide viral infection or experienced any symptoms during the viral outbreak. Therefore, the presence of neutralizing antibodies from prior infection was significantly associated with protection against re-infection (Fisher's exact test,  $p=0.002$ )."

Posted on [medRxiv 14 August 2020](#)

JAMA: [Effect of Remdesivir vs Standard Care on Clinical Status at 11 Days in Patients With Moderate COVID-19: A Randomized Clinical Trial](#)

"Question: Does remdesivir provide a benefit on clinical status for patients hospitalized with moderate coronavirus disease 2019 (COVID-19) pneumonia?

Findings: In this randomized, open-label, phase 3 trial that included 584 patients with moderate COVID-19, the day 11 clinical status distribution measured on a 7-point ordinal scale was significantly better for those randomized to a 5-day course of remdesivir (median length of treatment, 5 days) compared with those randomized to standard care. The difference for those randomized to a 10-day course (median length of treatment, 6 days) compared with standard care was not significantly different.

Meaning: Hospitalized patients with moderate COVID-19 randomized to a 5-day course of remdesivir had a statistically significantly better clinical status compared with those randomized to standard care at 11 days after initiation of treatment, but the difference was of uncertain clinical importance."

Lancet Respir Med: [Apples and oranges: international comparisons of COVID-19 observational studies in ICUs](#)

"Multiple observational cohorts describing the outcome of patients with COVID-19 from across the world have been published. Typically, these studies have reported regional or

national cohorts and no two countries have had the same experience. The reasons for these differences are complex and difficult to quantify. Nonetheless, to be able to draw meaningful inferences from these data we must tackle the issues associated with international comparison."

Lancet Rheumatol: [COVID-19-associated hyperinflammation and escalation of patient care: a retrospective longitudinal cohort study](#)

"A phenotype of COVID-19-associated hyperinflammation (COV-HI) defined by measurement of readily available routine clinical parameters (C-reactive protein and ferritin concentrations) was observed among a proportion of people with COVID-19 admitted to one of two UK hospital trusts. In the total cohort, meeting the COV-HI criteria on admission was associated with a higher mortality (40%) than that in those who did not meet the criteria (26%). Among patients eligible for full escalation of treatment, 37% fulfilled the COV-HI criteria at admission, and 62% of these patients required escalation of respiratory support by day 3. In total, 74% of patients eligible for escalation of respiratory support met the criteria by the day they required the respiratory support.

COV-HI is associated with adverse outcomes. A more detailed definition is achievable and desirable through further research and validation to develop a prediction model. Further research into this phenotype could facilitate targeted trials of intervention with immunomodulation and help to identify patients likely to require escalation of care."

PNAS: [Broad host range of SARS-CoV-2 predicted by comparative and structural analysis of ACE2 in vertebrates](#)

"The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the cause of COVID-19, a major pandemic that threatens millions of human lives and the global economy. We identified a large number of mammals that can potentially be infected by SARS-CoV-2 via their ACE2 proteins. This can assist the identification of intermediate hosts for SARS-CoV-2 and hence reduce the opportunity for a future outbreak of COVID-19. Among the species we found with the highest risk for SARS-CoV-2 infection are wildlife and endangered species. These species represent an opportunity for spillover of SARS-CoV-2 from humans to other susceptible animals. Given the limited infectivity data for the species studied, we urge caution not to overinterpret the predictions of the present study."

### **Selected Literature: Preprints**

*Preprints are found on preprint servers such as [arXiv](#), [bioRxiv](#), and [medRxiv](#); they are commonly used for biomedical research. Per medRxiv: "Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information."*

medRxiv: [Phylogenetic analysis of SARS-CoV-2 in the Boston area highlights the role of recurrent importation and superspreading events](#) (25 August 2020)

"SARS-CoV-2 has caused a severe, ongoing outbreak of COVID-19 in Massachusetts with 111,070 confirmed cases and 8,433 deaths as of August 1, 2020. To investigate the introduction, spread, and epidemiology of COVID-19 in the Boston area, we sequenced and analyzed 772 complete SARS-CoV-2 genomes from the region, including nearly all confirmed cases within the first week of the epidemic and hundreds of cases from major outbreaks at a conference, a nursing facility, and among homeless shelter guests and staff. The data reveal over 80 introductions into the Boston area, predominantly from elsewhere in the United States and Europe. We studied two superspreading events covered by the data, events that led to very different outcomes because of the timing and populations involved. One produced rapid spread in a vulnerable population but little onward transmission, while the other was a major contributor to sustained community transmission, including outbreaks in homeless populations, and was exported to several other domestic and international sites. The same two events differed significantly in the number of new mutations seen, raising the possibility that SARS-CoV-2 superspreading might encompass disparate transmission dynamics. Our results highlight the failure of measures to prevent importation into MA early in the outbreak, underscore the role of superspreading in amplifying an outbreak in a major urban area, and lay a foundation for contact tracing informed by genetic data."

medRxiv: [Hydroxychloroquine in the treatment of outpatients with mildly symptomatic COVID-19: A multi-center observational study](#) (25 August 2020)

"Background: Hydroxychloroquine has not been associated with improved survival among hospitalized COVID-19 patients in the majority of observational studies and similarly was not identified as an effective prophylaxis following exposure in a prospective randomized trial. We aimed to explore the role of hydroxychloroquine therapy in mildly symptomatic patients diagnosed in the outpatient setting.

Methods: We examined the association between outpatient hydroxychloroquine exposure and the subsequent progression of disease among mildly symptomatic non-hospitalized patients with documented SARS-CoV-2 infection. The primary outcome assessed was requirement of hospitalization. Data was obtained from a retrospective review of electronic health records within a New Jersey USA multi-hospital network. We compared outcomes in patients who received hydroxychloroquine with those who did not applying a multivariable logistic model with propensity matching.



Results: Among 1274 outpatients with documented SARS-CoV-2 infection 7.6% were prescribed hydroxychloroquine. In a 1067 patient propensity matched cohort, 21.6% with outpatient exposure to hydroxychloroquine were hospitalized, and 31.4% without exposure were hospitalized. In the primary multivariable logistic regression analysis with propensity matching there was an association between exposure to hydroxychloroquine and a decreased rate of hospitalization from COVID-19 (OR 0.53; 95% CI, 0.29, 0.95). Sensitivity analyses revealed similar associations. QTc prolongation events occurred in 2% of patients prescribed hydroxychloroquine with no reported arrhythmia events among those with data available.

Conclusions: In this retrospective observational study of SARS-CoV-2 infected non-hospitalized patients hydroxychloroquine exposure was associated with a decreased rate of subsequent hospitalization. Additional exploration of hydroxychloroquine in this mildly symptomatic outpatient population is warranted."

### **Upcoming Events (Webinars, Calls, etc.)**

WHAT: Long covid: diagnosis, management, prognosis (from BMJ)

WHEN: Thursday, 3 SEP 2020 1030 EDT

DETAILS: A free webinar for clinicians, researchers and policymakers to discuss the emerging evidence about 'Long covid' convened by The BMJ and chaired by editor-in-chief Dr Fiona Godlee.

Our expert panel includes: Trisha Greenhalgh, Tim Spector, Nisreen Alwan, Valentia Puntmann, Nick Peters, Paul Garner, Lynne Turner-Stokes

Questions we hope to cover (time permitting) include:

- What do we mean by long covid/post acute covid?
- What are different perspectives/ experiences/ categories?
- What do we know about how common it is?
- What might be the pathophysiology?
- What are the best approaches to management?
- What data should we be collecting?
- What research should we be doing?

REGISTER: [https://zoom.us/webinar/register/WN\\_uqOnQUJLS1GVvdeW3yNYyQ](https://zoom.us/webinar/register/WN_uqOnQUJLS1GVvdeW3yNYyQ)

WHAT: [Hidden Consequences: How the COVID Pandemic is Impacting Children Series-Child Health and Wellness Webinar](#)

WHEN: Wednesday, 30 SEP 2020 1330-1445 EDT

DETAILS: Assistant Secretary for Preparedness and Response (ASPR), Technical Resources, Assistance Center, and Information Exchange (TRACIE) and ASPR's Pediatric Centers of Excellence are collaborating on a webinar series focused on the impact of the COVID-19 pandemic on children. Topics will include impact on child health and wellness, child emotional and social impact, and impact of COVID-19 on children with special healthcare needs, and how secondary/other disasters affect children during the pandemic.

The first webinar in this series will focus on child health and wellness. Panelists will discuss resumption of routine care, missed immunizations and lead poisoning screening, sleep, and child neglect and abuse.

REGISTER: <https://register.gotowebinar.com/register/403704795003207440>

#### *Past Events (Recorded)*

UC San Diego Health, COVID-19 Grand Rounds: [COVID-19 and Health Care Disparities](#) [YouTube] (26 August 2020)

CDC COCA: [2020-2021 Influenza Vaccination Recommendations and Clinical Guidance during the COVID-19 Pandemic](#) (20 August 2020)

#### **News in Brief**

The CDC has updated testing guidance ([CDC](#); see section above for more discussion).

Long read: "When covid-19 becomes a chronic illness" ([Economist](#)).

#### *Transmission and Testing*

An expert panel discussing airborne transmission of SARS-CoV-2 says there is "circumstantial evidence" and that research is evolving ([Medpage](#); see [NASEM virtual workshop](#) for more details.)

A simple and cheap coronavirus test from Abbott has been approved by the FDA; the 15-minute test will cost \$5 ([Science](#)).

"Four scenarios on how we might develop immunity to Covid-19" ([STAT](#)).

Opinion: "When it comes to COVID-19, most of us have risk exactly backward" ([NYT](#)).

### *Research and Data Integrity*

The NIH has established the Centers for Research in Emerging Infectious Diseases (CREID). "The global network will involve multidisciplinary investigations into how and where viruses and other pathogens emerge from wildlife and spillover to cause disease in people" ([NIH](#)).

Long read: "Why the United States is having a coronavirus data crisis" ([Nature](#)).

### *Treatments*

On Sunday, the FDA authorized convalescent plasma as emergency treatment for COVID-19 ([NPR](#)).

Some experts – including one of the researchers in the Mayo Clinic study that underpinned the EUA – think that the FDA misrepresented data in their approval of convalescent plasma ([NYT](#)).

Studies for antibody trials and other therapeutic interventions for coronavirus are taking longer than expected ([NYT](#)).

### *Vaccines*

"China says it began public use of coronavirus vaccine a month ago, bypassing clinical trials" ([WaPo](#)).

Phase 1 data on Moderna's coronavirus vaccine suggest immunogenicity in patients older than 55 years ([GEN](#)).

The WHO's global COVAX initiative now includes 172 nations and 9 COVID-19 vaccines in development, with 7 in clinical trials ([HPN](#)).

The vaccine race is pitting science against politics ([NPR](#)).

A company has received funding from BARDA to develop a dermal patch vaccine delivery system ([Verndari](#)).

Opinion: "A vaccine that stops COVID-19 won't be enough" ([NYT](#)).

### *Ripple Effects*

Experts warn that the PPE shortage could last years ([KHN](#)).

Child predators used the COVID lockdown to find more children online ([Patch](#)).

Long read: "COVID-19 is proof of just how socially determined health is" ([Vice](#)).

### *Back to School*

Do you smell that? Penn State is using scratch-and-sniff tests to screen for COVID-19 ([KHN](#)).

Track coronavirus cases at US colleges and universities ([NYT](#)).

## *Other Infectious Diseases and Outbreaks*

The latest Ebola outbreak in the DRC is up to 104 cases – 100 confirmed (4 probable), 44 deaths, 41 recovered ([WHOAFRO](#)).

Africa has been declared free of wild poliovirus. More than 95% of humans in the 54 countries found on the continent have received the polio vaccine, which was developed in 1952 ([BBC](#)).

Mosquitoes infected with a bacterium could be key in eliminating dengue ([Nature](#)).

## *Thanks, Coronavirus*

Long read: "The summer without blockbusters" ([Vox](#))

First it was toilet paper, then it was coins. The latest hard-to-get item? Dumbbells. ([Vox](#))

I don't want to alarm you, but... the iconic slice of New York pizza is at risk, too ([WaPo](#)).

That beer you might grab to go with your slice? Careful, it could be hand sanitizer packaged in a food container – like a beer can ([Twitter](#); [FDA](#)).



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